

on the cusp of HISTORY

By
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Parker

EDITOR'S NOTE *this young lady is on the cusp of going down in UK writing equipment history for re-introducing the production of gold nibs into the UK, this is the story to date by the lady herself - and by the way she's American.*



Spark Nibs Limited – making 18kt gold nibs in the UK for the first time in decades. This is not something I planned to do or would have expected to do, but here I am. It is a long and winding road but an interesting one. Follow the road and enjoy the journey, the destination is far more interesting when you understand the route to get here.

The idea to develop a production line in the UK for Gold nibs began in 2014 when a small group of specialists in pen manufacturing came together to discuss the project of making an all British pen. A British made nib was required for this special pen production. While the ideas for the pen did not develop further, the idea of developing a British nib struck a chord that remained with me.

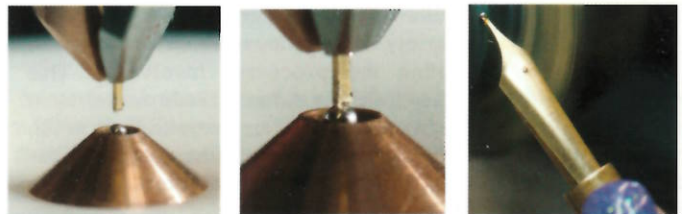
Over the following years, days and weeks were spent studying how nibs are produced. Notes were taken, questions noted and figuring out who the next person was to go to – this was the routine. Interviews were held with numerous people connected, in various ways, with nib production recording every detail discovered. Too many to name here, but each and every one of them contributed in some part to the overall design and development of the production line. This, is without a doubt, one of two key ingredients to this mix. I will tell you the second ingredient in due course.

The general process was documented. After each interview, each step was meticulously documented and updated with any new information identified for that step. Information about the tools, thoughts I had from the interviews, considering what was and what was NOT said in the response to each question. Listening to everything was crucial. Every person was willing to help, but unable to or not know enough to share every element of the process. Several of these people and companies continue to support the direction of my vision today and hopefully long into the

future.

Investigating the tools and equipment plus customisation for each stage of production consumed the most time since early 2017. It was clear that two activities were critical to the process, and without the solution in place for these, there would be no nib business. I am referring to tipping (adding the “iridium” ball to the tip) and slitting (cutting the tip and gold) to create the tines.

I will take a moment here to clarify that iridium has not been used in tipping material since the 30's or 40's. It is too brittle, too expensive and better alternatives were more readily available. Today, it is a blend of platinum alloys which have a high melting point and produces a smooth finish. The tipping balls have a high-percentage ruthenium alloy with a blend of other alloys added. No iridium at all.



During my years of investigating various solutions for the tipping and slitting problems, I travelled to several countries to test equipment in person, had machine specialists perform tests for me at great expense. I have had many salesmen promise they could solve the problem. When it came time to test, even machines 5 times as expensive as the ones I tested for the cutting were not up for the job.

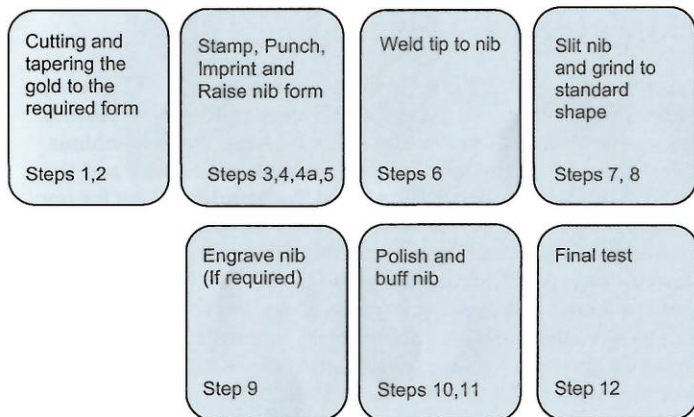
Laser cutting would have been a rather nice idea, a very modern twist on an old process. However, there are several serious (in my humble opinion) flaws in using these machines. How they cut, how they affect the materials being cut, and the speed at which they can do this failed the standards I set for my solution, I had no other standards or controls to go by, all my knowledge was based on the information I collected and endless hours just thinking about the problems. I did not know what machine I was looking for, but I knew the results I needed from each stage. Another challenging question entered the mix – how do you test a machine with suitable samples when the machine is for the middle of a production line and that production line is not yet complete? There was no way of creating samples for testing, unless full investment was made into the earlier stages and wait until the samples could be created in house. I was not prepared to break my promise on purchasing anything until the key processes were proved. Waiting was not exactly something I did very well either. Basic alternative options were developed to enable some initial testing to be performed.



Developing the tools to cut the shape and make the nib form should be easy – one just copies what has already been done. Which one? Why choose one brand or shape of nib over another? Why not just create your own? What feed should be used? There are thousands of types which could be copied, or does one create a whole new design? So many questions, and this was the “easy” part of the process to reproduce.

Wrong. The machines may be easier to find however, the tooling was just as challenging to resolve. The science behind a nib and how the production process affects the finished product is quite complex. Various specialists in a variety of fields have been consulted to refine the processes involved. This knowledge is either a trade secret or in many cases, lost or forgotten since the manufacture of gold nibs ceased in the UK. The test was to attempt to resurrect this knowledge from the few remaining people originally involved in the industry.

The production of a nib can be broken down into 12 steps.



Each step requires custom tooling and analysis as to how it will impact the metals and finished product. Even the steps that appear to be simple, such as cutting a piece of gold or the final write test, will cause complications and tooling which is not “off the shelf”. For every process the tooling had to be designed and drafted.

Finding engineers to make the tools was another matter. In several cases, this took months with failures, let downs and those who just wanted to take your money. Not to mention those who did not want to take me seriously and pass me off with a “pat on the head” and not ask such silly questions. Many machines are “old school” and not only is making a nib a disappearing knowledge, so is the knowledge of those who made the tools for them. This will continue to be a

problem for any of our future tooling requirements for different nibs.

Even after so much research, analysis and consulting with others, failures happen. A LOT. Some cost money, all cost time. Every failure will teach you something you did not know or understand before, it is a First Atttempt In Learning. These failures can be hard to recover from as the design or method seemed to be the clear solution when setting it up. You get back up and try again, rethink the whole problem, incorporating the new information learned, and find a new solution. Slowly and over a long time, the problems and failures reduce, and the processes started to work. This took 18 months of failures, with a handful of successes before I could hold in my hand something that resembled a nib.

By March 2018, machines arrived in the workshop, tool development was under way and every process had something to track. Funding was becoming an issue and other aspects of the business had to be considered. Website construction, packaging, marketing, business principles all had to be considered, drafted and finalised. As each station started coming together, more questions were raised. It was as if you are on a continuous inward spiral, always learning more and getting closer to the centre, but more questions came out, and another spin around the centre point. I had an engraving machine and did not know how to use it. So, I sold custom dog tags to groups I was connected to, which enabled me to learn how to improve my skills on the machine, deal with customers, packaging, mail orders, costings, invoicing and payments. This was an invaluable exercise to understand what to expect when dealing with customers, at a much lower cost. It also helped earn some money for the business.

It was at this time, alternative investment schemes were considered, think “Dragons Den” type of investment. It would take time to put the plan together and I would have to give away a reasonable percentage (20 - 40%) of the company. As a business professional, it was a difficult decision, but not one I could make at this time.

The first stages of the production line were thought to be completed in April – Cutting and tapering the gold. A modern 6mm nib is thicker at the tip than inside the pen, by 0.1mm. This is not a lot, but it is enough to change how one adds this taper to the gold. The first attempt failed and failed beyond even what the experts expected. A whole rethink was required. I had to change from stamping the nibs from a long strip, to stamping them from single pieces. Each piece needed to be tapered front to back and one at a time. This change meant that tooling in the next process had to be modified.



The second solution took another 3 months to complete. This worked much better and has been used to taper hundreds of pieces of silver. Due to the cost of each of the metals, all machines and processes are tested in silver until they are proven to work to the expected standard, then you test on gold. Silver costs much less than gold, which is important as everything will be scrapped when the work is finished.

When it came to tapering the gold on the revised solution, it was clear that even a slight angle on the cut meant that it did not feed straight. A more robust cutting tool was required, it had to be able to feed the metal strip in straight and make a clean cut to a specific length, every time. A new tool and a new operation I was not expecting to do. This meant more cost, more space and more time added to the production process. Once the cut was solved, when it came time to taper an average batch of nibs, this manual process was not going to work in full production. Tapering solution version 3 is currently being developed. There is no guarantee this will be the final solution, but you must keep trying.

The welding unit also needed custom tooling. This was more difficult as I needed to find someone I could work with to build and develop the solution. There was no expectation it would be right the first time and that was the case. Over several weeks, much observation, testing and reviewing all the information recorded for each weld, a solution came into view. I can safely say, when you find a good engineer whom you can work with, keep them – they truly are worth their weight in gold! Solving problems is a nice technique but solving them simply and elegantly is a true talent. The production line came together so much faster with the right-minded people working with you.

In August 2018, all my time was focused on the nib project. It filled my days and nights constantly. Endless testing, analysing, identifying the problem and developing a solution went on every day. Testing continued and tooling for the cutting tool was required. Once the correct tools were made to hold the nibs, cut testing began. It quickly became apparent that despite lab testing, this machine was not going to be sufficient to do the job. There was a date in the diary of 7 October, The London Pen Show, to announce and launch the nib. Time was moving faster than ever and while progress was happening in leaps and bounds, it was going to be a challenge to make it, but work continued as if we were going to make it. All was going well; all the processes were working largely as expected. There were tweaks and improvements to make however, things were working until the week of the show. The website was ready to launch, the gold was available to start making the nibs and I was continuing to test everything. A new designed jig for the cutting machine was made to manage some of the short falls of the existing machine. This worked!

However, it proved that the blades were not going to be cost efficient to use, not even close. I needed to find a new blade and a new machine. What was harder to take – a finished working nib was just not going to be possible for the show. Personally, it was a very sad time. Instead, the company was launched without a product. Much time was spent educating people about how nibs are produced. Networking with the other vendors in the room and showing them how far things had come was an exciting high. Looking back at how far things had come, next steps and advice from various specialist on how to improve on different elements was the order of the day.

At the time of writing this article, the new cutting solution has been identified, tested, tested again, additional blades located and tested. It is about to be added into the production line, and the cycle begins again – new jigs, new programs, new machines, more testing. We will have a UK manufactured 18kt gold nib soon. Very soon. If you were to ask me when – the answer is simply, not soon enough.

Previously, I mentioned there were two ingredients which were critical to the success of this venture becoming a reality, the first, you may recall was the knowledge and support from other specialists, who willingly shared all they could to move things forward. The second ingredient is the sheer dogged determination and firm belief that this can and will happen. To get up and keep going no matter what. Take on one obstacle at a time, get over it and move on to the next. Remember there is a finish line, and every step is a step closer to that line. Very philosophical, but it is how I have made it this far and keep smiling. This article only covers a small sample of the failures, setbacks and trials I experienced on this journey and without this attitude, the journey would have ended a long time ago.

What is next?

Once the process and all the tooling for the 6mm nib has been used and tested for a time, we will use the knowledge and experience to design the 5mm and 8mm tools, in parallel. In the background, we are already looking into the concept, design and manufacture of a flex nib. This will not be easy, and it will not be fast, but it is under investigation.

Additional services which will be available to customers will be the ability to have your name imprinted on the nib. This will require custom tools to be made with your design in advance of any nib order. We also can add Rhodium plating nibs in a variety of colours. This particular service is outsourced to a specialist plating service. Finally, the last service we will add will be retipping a nib or increasing the size of the nib (i.e. B to BB).

Susan Parker and her husband George have been WES members for many years and are regular visitors to pen shows in the UK Susan can be contacted at sparker@sparknibs.com Spark Nibs can be found at www.sparknibs.com